

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-46. Cancelled.

47. (New) An apparatus for medical screening and diagnosis by dual detection of stethoscopic and Doppler signals, comprising a sound-transmitting linking conduit connected, at one end, to a housing which at least partially forms an ear trumpet provided with a member, and, at the other end, to at least one earpiece for listening to a stethoscopic signal coming from the ear trumpet, wherein the housing is coupled to at least one ultrasound probe designed to permit convergence of reception of ultrasonic and stethoscopic signals, and wherein the probe is at an angle of about 30-70 degrees relative to the membrane, and is connected to a transducer processing circuit capable of supplying from a Doppler signal, by coupling the processing circuit to a loudspeaker for stethoscopic-type listening, and an audio signal, by coupling the processing circuit to viewing means, both simultaneous stethoscopic-type listening and video signal viewing.

48. (New) The apparatus of claim 47, which further comprises means provided for delivering and forming a film of semi-solid product on the skin of a patient, for achieving an intimate contact between skin of the patient and the housing and for channeling wave propagation.

49. (New) The apparatus of claim 47, in wherein the loudspeaker is arranged substantially against the ear trumpet so that the audio signal is amplified by the ear trumpet and renders the stethoscopic sound perceptible at the earpiece by the linking conduit.

50. (New) The apparatus of claim 47, which further comprises a microphone which is coupled to the ear trumpet to detect the stethoscopic sound signal and transmit it, in a form of an electrical signal, to the processing circuit and produce a video signal.

51. (New) The apparatus of claim 47, wherein the viewing means are in the form of a liquid crystal screen permitting graphic display of a stethoscopic and Doppler signal, or in the form of a module with light-emitting diodes.

52. (New) The apparatus of claim 47, which further comprises a microprocessor controlled by an interpretation algorithm and coupled to the processing circuit in order to permit analysis and a combination of stethoscopic or Doppler measurements or both, delivered by the processing circuit or detected from stethoscopic listening, and to supply a provide stethoscopic diagnosis, Doppler diagnosis or cross diagnosis or a combination thereof.

53. (New) The apparatus of claim 47, which further comprises a display module with three light-emitting diodes which is mounted on the housing, which provides an interpretation and a diagnosis based on the measurement of the Doppler signal or a cross diagnosis based on the interpretation algorithm by giving preference to the Doppler diagnosis when the interpretations are divergent, each diode of the module emitting in a specific color corresponding, respectively, to a positive diagnosis, a negative diagnosis, or a non-interpretable result in the case where at least the Doppler measurement is not interpretable.

54. (New) The apparatus claim 47, wherein, instead of displaying a non-interpretable result when at least the Doppler measurement is non-interpretable, diagnosis is in this case based on measurement of the stethoscopic signal, each diode of the module emitting in the specific color corresponding, respectively, to a positive diagnosis, a negative diagnosis, or a non-interpretable result; and wherein a case where the stethoscopic signal is not interpretable, or of malfunction of the apparatus, the diagnosis is then based on the stethoscopic sound signal.

55. (New) The apparatus of claim 47, which further comprises, a system of recording and viewing the Doppler or stethoscopic video signal is provided by wireless connection between the electronic processing circuit and a viewing or printing module.

56. (New) The apparatus of claim 47, which further comprises peripheral outputs in order to permit a connection to a microcomputer and optionally to an audio headset.

57. (New) The apparatus of claim 47, which further comprises for use of the probe with aid of a finger, an electrical circuit for powering the ultrasound probe, controlled by an actuator which can be mounted on the linking conduit or on the housing.

58. (New) The apparatus of claim 57, wherein the actuator is a multifunction switch which serves also for selective control to the means for supplying stethoscopic, Doppler or cross diagnoses by the viewing means, to the means for triggering the diagnosis from measurements delivered by the processing circuit or picked up from listening, and to the system for recording and remote viewing, the multifunction being realized by different stages identified by a decision table or a logic unit for programming the connections of the circuits as a function of the number of times the actuator is activated.

59. (New) The apparatus of claim 47, which further comprises a power supply, which is a cell or rechargeable battery.

60. (New) The apparatus of claim 47, wherein the housing forms the ear trumpet accommodating the ultrasound probe, in a centered manner, and contact means are provided to be interposed temporarily between the ultrasound probe and the membrane of the ear trumpet, in order to transmit a Doppler signal to the processing circuit coupled to the loudspeaker which emits the audio signal amplified in the ear trumpet.

61. (New) The apparatus of claim 60, wherein the contact means of interposition an inflatable balloon covering the distal end of the probe and a device for inflating the balloon with liquid.

62. (New) The apparatus of claim 61, wherein the inflating device comprises a tubing which brings the balloon into communication with a source of liquid, and means configured to drive liquid from the source into the tubing.

63. (New) The apparatus of claim 60, wherein the contact means of interposition between the probe and the membrane is controlled from outside the ear trumpet by the actuator button.

64. (New) The apparatus of claim 60, wherein means controlled from outside the ear trumpet to tilt the probe is provided in connection with the actuator button.

65. (New) The apparatus of claim 60, wherein the means to tilt the probe comprises at least one cable, of which one end is fixed to the end of the probe, and means configured to pull the other end of the cable and tilt the end of the probe in order to orient it toward the sound response most perceptible at the earpiece.

66. (New) The apparatus of claim 47, which further comprises a circuit is provided for powering the ultrasound probe and controlled by the actuator button.

67. (New) The apparatus of claim 47, which further comprises a circuit is provided for recording the Doppler signal and controlled by the actuator button.

68. (New) The apparatus of claim 64, wherein the actuator buttons form a single button, and means are provided to maintain a flow of liquid when the actuator button is released, the means comprising a plunger made of a magnetic material for driving the liquid, and an electromagnetic coil applying a magnetic force for holding a plunger.

69. (New) The apparatus of claim 47, wherein the probe is accommodated in the housing and outside the ear trumpet, the housing forming a substantially cylindrical turret.

70. (New) The apparatus claim 47, wherein the probe is accommodated partially in the housing and partially outside the housing, the probe passing through the housing via a sealing ring which mechanically isolates the probe.

71. (New) The apparatus of claim 70, wherein the housing has a lower part curved in its central area.

72. (New) The apparatus of claim 47, wherein the probe is outside the housing, which is reduced to an upper part for signal processing, the probe being fixed along the ear trumpet.

73. (New) The apparatus of claim 69, in which the probe is inclined toward the central axis of the ear trumpet by an angle between about 40 and 55 degrees.

74. (New) The apparatus of claim 69, in which the housing has a turret shape substantially cylindrical and of ovoid cross section, the turret is limited by an upper face, at the center of which the linking conduit emerges, and by an open lower face where the membrane of the ear trumpet and the end of the probe are positioned.

75. (New) The apparatus of claim 69, wherein the probe is prolonged, and means are provided for delivering the semi-solid product forming a connecting layer between the end of the continuation of the probe and the skin of the patient.

76. (New) The apparatus of claim 75, which further comprises a plunger which controls the semi-solid product and is accessible from the housing, in particular from the upper face, the switch for powering the probe also being arranged on the housing.

77. (New) The apparatus of claim 76, which further comprises a reservoir arranged in the housing, the gel being delivered through a flexible tube by an ejection nozzle situated in contact with the lower face of the turret, and the thrust of the plunger making it possible to dose the correct quantity of gel delivered via the nozzle.

78. (New) The apparatus of claim 69, wherein the probe is connected to a loudspeaker, mounted on an outer face of the ear trumpet by a transducer circuit, the Doppler signal is converted by the transducer circuit in order to supply an audio signal by the loudspeaker, the sound being amplified in the ear trumpet, propagated in the linking conduit, then listened to at the earpieces.

79. (New) The apparatus of claim 78, which further comprises interpretation software which controls a microprocessor of a microcomputer coupled to an output provided on the housing comprising means for retrieving and storing results of stethoscopic or Doppler listening or both.

80. (New) The apparatus of claim 79, wherein the microcomputer is equipped with a screen which shows the graph of the Doppler signal after the Doppler signal has been converted by the circuit and also transmitted to the microcomputer and stored in the form of a video signal via the output.

81. (New) The apparatus of claim 79, wherein the software provides a diagnosis on the basis of the evaluations which have been retrieved and stored, with the aid of the display module with at least one light emitting diode, which is mounted on the housing and coupled to the transducer circuit for viewing the interpretation.

82. (New) The apparatus of claim 82, which further comprises a viewing and printing module situated at a remote point, which receives video signals.

83. (New) The apparatus of claim 82, which further comprises an antenna to emit video signals picked up by the receiver of the viewing module, for further processing in a demodulator and in a viewing adapter.

84. (New) The apparatus of claim 82, which further comprises a headset output to permit stethoscopic listening based on the sound or based on the Doppler signal converted into an audio signal.

85. (New) The apparatus of claim 82, wherein the video signals, or audio signals or both, after pickup, are transmitted to the microprocessor for evaluation and are viewed on the screen of the microprocessor.

86. (New) The apparatus of claim 82, further comprising a the display module with light-emitting diodes showing a direct or cross interpretation based on the Doppler and stethoscopic video signals.

87. (New) The apparatus claim 47, wherein said means is in a form of a gel.

88. (New) A method of effecting medical screening and diagnosis, which comprises effecting dual detection of stethoscopic and Doppler signals to effect said screening and diagnosis using the apparatus of claim 47.

89. (New) The method of claim 88, wherein the apparatus is used to screen cardiovascular disease by measuring systolic pressure to establish a Systolic Pressure Index (SPI).

90. (New) The method of claim 89, wherein the screened cardiovascular disease is an incipient arterial disease.

91. (New) The method of claim 90, wherein the arterial disease is of coronary or carotid arteries or both.